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10/736,089	12/15/2003	Ajith K. Kumar	132250	3281
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General Electric Company GE Global Patent Operation 2 Corporate Drive, Suite 648 Shelton, CT 06484			EXAMINER MANCHO, RONNIE M	
			ART UNIT 3664	PAPER NUMBER
			NOTIFICATION DATE 05/19/2011	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary**Application No.**

10/736,089

Applicant(s)

KUMAR ET AL.

Examiner

RONNIE MANCHO

Art Unit

3664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14, 16, 18-22, 26 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14, 16, 18-22, 26, 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-845)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 14, 6, 18-22, 26, 50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Amended claim 14 recites, "*said second level including a movement planner for analyzing the second level operational parameters for a plurality of trains operating within the railway system, the second level operational parameters including a fuel usage rate for each of the trains and congestion data for the railway system, the movement planner iteratively generating a movement plan including a trip for each of the trains for optimizing at least one of the second level operational parameters with respect to one of cost and scheduling*", this new matter.

At the onset, the originally filed application provides no support for, "second level operational parameters,the second level operational parameters including a fuel usage rate for each of the trains and congestion data for the railway system". The sections 0049-0056 cited by applicant as support for the amended limitation mention congestion data for example, -- [0049] *The train level 200 provides engine performance data 812 to the network fuel*

manager 802. The movement planner 702 at the track network level 200 utilizes the Business Objective Function (BOF) for each train, the planning cushion and refueling points 806 and the engine failure and horsepower reduction data 708, to develop and modify the movement plan for a particular train at the train level 200--.

*The cited sections further recite, -- [0 0 5 5] The benefits of this operation of the track **network level 200** includes allowing the movement planner 702 to consider fuel use in optimizing the movement plan without regard to details at the consist level, to predict fuel-rate as a function of power and speed, and by integration, to determine the expected total fuel required for the movement plan. Additionally, the movement planner 702 may predict the rate of schedule deterioration and make corrective adjustments to the movement plan if needed".*

At certain times in the specification unit 200 is referred to a "train level" and then at other times unit 200 is referred to as a " network level". Anyway, the cited sections do not mention, *"the second level operational parameters for a plurality of trains operating within the railway system, the second level operational parameters including a fuel usage rate for each of the trains and congestion data for the railway system".* Additionally, the cited sections do not mention, *"iteratively generating a movement plan including a trip for each of the trains for optimizing at least one of the second level operational parameters with respect to one of cost and scheduling".*

As such the original disclosure fails to provide support for possession of the claimed subject matter.

Claim 50 is rejected similar to claim 14. The rest of the claims are rejected for depending on a rejected base claim.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14, 6, 18-22, 26, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites "the railroad infrastructure". The claimed phrase lacks antecedent basis. The rest of the claims are rejected for depending on claim 14.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. AS BEST UNDERSTOOD, Claims 14, 16, 18-22, 26, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polivka et al (5828979) in view of Schick et al (US 20020065698).

Regarding claim 14, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64; col. 7, lines 3-67; col. 8, lines 1-67) disclose a multi-level system for management of a railway system and its operational components, the railway system comprising:

a first level (col. 4, lines 39-67; col. 5, lines 1-64) configured to control a servicing operation within the first level, said first level including first level operational parameters defining operational characteristics of service facilities of the railroad infrastructure and data of

the first level, said controlling a servicing operation comprising issuing a work order to service facilities for implementing the servicing operations, said work orders comprising at least one of the following: refueling instructions, scheduling work bays, scheduling work crews, scheduling tools, or ordering parts; and

a second level (col. 4, lines 39-67; col. 5, lines 1-64) configured to control an operation within the second level, said second level including second level operational parameters defining the operational characteristic and data of the second level over time, wherein the second level is a sub-level of said first level;

said first level providing the second level with the first level operational parameters (col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64) at regular scheduled intervals, and the second level providing the first level (see signal flow, figs. 2, 4-14) with the second level operational parameters at periodic intervals (col. 7, lines 29-49); and

said controlling the operation within the first level and said controlling the operation within the second level each being a function of both the first and second level operational parameters (col. 4, lines 39-67; col. 5, lines 1-64).;

said second level including a movement planner for analyzing the second level operational parameters for a plurality of trains operating within the railway system, the second level operational parameters including a fuel usage rate for each of the trains and congestion data for the railway system, the movement planner iteratively generating a movement plan including a trip for each of the trains for optimizing at least one of the second level operational parameters with respect to one of cost and scheduling (col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64).

Polivka discloses the first level as mentioned above, but did not particularly mention servicing operation comprising issuing a work order to service facilities for implementing the servicing operations, said work orders comprising at least one of the following: refueling instructions, scheduling work bays, scheduling work crews, scheduling tools, or ordering parts

However, Schick disclose a multi-level system for management of a railway system and its operational components, the railway system comprising:

a first level 18 configured to control a servicing operation within the first level, said first level including first level operational parameters defining operational characteristics of service facilities 22 of a railroad infrastructure and data of the first level, said controlling a servicing operation comprising issuing a work order to service facilities for implementing the servicing operations (sec. 0023, 0029, 0030, 0031, 0033), said work orders comprising at least one of the following: refueling instructions, scheduling work bays, scheduling work crews, scheduling tools, or ordering parts (sec. 0057, 0058, etc). As further noted, the drawings and entire disclosure of Schick are combinable as known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art to modify Polivka et al by Schick for the purpose of effectively managing, repairing and maintaining a fleet of locomotives at low cost as taught by Schick.

Regarding claim 15, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67) in view of Schick disclose the system of claim 14 wherein the first level operational parameter and second level operational parameter are indicative of fuel usage in the railway system.

Regarding claim 16, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67) in view of Schick disclose the system of claim 14 wherein the first level operational parameter and second level

operational parameter are indicative of an economic valuation of the time of delivery of cargo carried in the railway system.

Regarding claim 18, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67) in view of Schick et al disclose the system of claim 14 wherein the operational parameters are indicative of predetermined changes in conditions over a period of time (col. 7, lines 29-49).

Regarding claim 19, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67) in view of Schick et al disclose the system of claim 18 wherein the operational parameters are indicative of a rate of change in the conditions.

Regarding claim 20, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64; col. 7, lines 3-67; col. 8, lines 1-67) in view of Schick et al disclose the system of claim 19 wherein the rate of change is with respect to time (col. 7, lines 29-49).

Regarding claim 21, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64; col. 7, lines 3-67; col. 8, lines 1-67) in view of Schick et al disclose the system of claim 19 wherein the rate of change is the change in one condition with respect to another (col. 7, lines 39-67).

Regarding claim 22, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64; col. 7, lines 3-67; col. 8, lines 1-67) in view of Schick et al disclose the system of claim 14 wherein an operational parameter of the second level relevant to the system optimization parameter is communicated periodically from the second level to the first level for adjusting the first and second level operational parameters based thereon.

Regarding claim 26, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64; col. 7, lines 3-67; col. 8, lines 1-67) in view of Schick et al disclose the system of

claim 22 wherein controlling the operation within the first level and controlling the operation within the second level includes identifying operating constraints and data at one of the first and second level and communicating the operating constraints and data to another of the first and second level to improve performance of operation at the another level.

Regarding claim 50, Polivka et al (figs. 2, 4-14; col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64; col. 7, lines 3-67; col. 8, lines 1-67) in view of Schick et al disclose a system for management of a railway system and its operational components, the railway system comprising:

a first level (col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64) including first level operational parameters defining operational characteristics of service facilities of the railway system and data of the first level;

a second level (col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64) including second level operational parameters configured to control an operation within the second level as a function of the first level operational parameters and second level operational parameters and wherein the second level operational parameters are indicative of changes in operational characteristics and data of the second level (col. 7, lines 3-67; col. 8, lines 1-67), wherein the second level is a sub-level of said first level; and

said second level continuously providing the first level with second level operational parameters (see signal exchange, figs. 2, 4-14), and wherein said first level continuously determines the first operational parameters as a function of the provided second level operational parameters;

said second level including a movement planner for analyzing the second level operational parameters for a plurality of trains operating within the railway system, the second

level operational parameters including a fuel usage rate for each of the trains and congestion data for the railway system, the movement planner iteratively generating a movement plan including a trip for each of the trains for optimizing at least one of the second level operational parameters with respect to one of cost and scheduling (col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64).

Polivka mention the said first level as mentioned above, but did not particularly mention that said operational characteristics comprise availability or cost of fuel, work crews, maintenance bays, tools, replacement locomotives, or parts.

However, Schick et al disclose a system for management of a railway system and its operational components, the railway system comprising:

a first level 18 including first level operational parameters defining operational characteristics of service facilities of the railway system and data of the first level, said operational characteristics comprising availability or cost of fuel, work crews, maintenance bays, tools, replacement locomotives, or parts (sec. 0023, 0029, 0030, 0031, 00330057, 0058, etc).

Therefore, it would have been obvious to one having ordinary skill in the art to modify Polivka et al by Schick for the purpose of effectively managing, repairing and maintaining a fleet of locomotives at low cost as taught by Schick.

7. Claims 14, 16, 18-22, 26, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swenson et al (5420883) and Root et al (7073753) and further in view of Schick et al (US 20020065698).

Please refer to the previous sections cited regarding canceled claims 1, 3, 8, 76.

Response to Arguments

8. Applicant's arguments filed 2/24/11 have been fully considered but they are not persuasive.

Applicant's arguments are based on new matter limitations that applicant does not have possession thereof.

The prior art in combination as best understood is believed to disclose, *said second level including a movement planner for analyzing the second level operational parameters for a plurality of trains operating within the railway system, the second level operational parameters including a fuel usage rate for each of the trains and congestion data for the railway system, the movement planner iteratively generating a movement plan including a trip for each of the trains for optimizing at least one of the second level operational parameters with respect to one of cost and scheduling* (col. 4, lines 39-67; col. 5, lines 1-64; col. 6, lines 36-64).

As such it is believed that the rejection is proper.

It is further believed that claims 14, 16, 18-22, 26, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swenson et al (5420883) and Root et al (7073753) and further in view of Schick et al (US 20020065698) by way of canceled claims 1, 3, 8, 76.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONNIE MANCHO whose telephone number is (571) 272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Khoi can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ronnie Mancho/
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